REMARKS

Applicants thank Examiner Lopez for conducting the kind and courteous discussion with Applicants' representative, Daniel R. Evans, on February 1, 2005. The content of the discussion is reflected in the amendments to the claims and the comments contained herewith. It is kindly requested that the Examiner favorably reconsider the outstanding rejections in view of the following.

As previously noted in Applicants Response filed June 8, 2004, in the production of glass for cathode ray tubes, it is common knowledge that in addition to the raw components, a refining agent such as Sb_2O_3 is used as an additive in an amount that ranges from 0.2 to 0.6 mass % (see Specification, page 2, lines 1-15). Its incorporation serves to **reduce defects** associated with bubbles within the panel glass.

However, it is known that if too much Sb_2O_3 is added the resultant glass contains defects which are due to the presence of ash. It is therefore very difficult to suppress both ash defects and bubble defects at the same time.

Applicants have found that it is now possible to produce glass for cathode ray tubes, by a process that allows for exclusion of Sb_2O_3 in which **no bubble defects** are present in the glass. Exclusion of Sb_2O_3 means that ash defects are eliminated as well. In the event that it is necessary to prepare glass with added Sb_2O_3, the process allows for only a slight addition of Sb_2O_3 in an amount that is lower than the level of conventional panel glass of cathode ray tubes (the content of Sb_2O_3 in Claim 1 is from 0 to 0.19 mass%).

The method for preventing the bubble defects is accomplished by varying the water content in the glass and carrying out vacuum degassing at a pressure of P which ranges from P_A to 6.1W+0.06 atm. In effect, water serves as a substitute refining agent, in lieu of added Sb_2O_3, by reducing bubble defects in glass.

Thus, Applicants claim processes directed to producing glass for cathode ray tubes, which comprises: melting a raw material in an atmosphere under a pressure of P_0 to obtain a molten glass; vacuum degassing the molten glass in an atmosphere under a pressure of P_A, which is less than P_0; wherein the pressure P of the molten glass is made to be at most (6.1W+0.06) atm in the vacuum degassing step, and wherein W is the content of water in mass %; and increasing water content in the raw material *or* the molten glass to obtain glass having at most 0.1 bubbles/g (Claims 14 and 26).

The rejection of claims 1-4 and 8 under 35 U.S.C. § 102(b), or in the alternative under 35 U.S.C. § 103(a), over Tanaka et al. (Proceedings of the International Conference on Science and Technology of New Glasses, 1981, A4, pps. 71-76) is respectfully traversed.

Tanaka generally examines the "behaviors of bubbles and gases in a soda-lime glass," in order to "eliminate the bubbles in the latter stage of melting" (Abstract). Tanaka describes degassing molten soda-lime glass with a silicon dioxide content of 73.2 wt% (page 72, 3rd paragraph). Tanaka analyzes the extracted gases (O_2, N_2, CO, CO_2, and H_2O) before and after subatmospheric treatment of soda-lime glasses at 1370°C for 60 min (page 74, Table 1).

However, Tanaka does not describe or suggest the aspects that are presently claimed, especially the step of " increasing water content in the raw material *or* molten glass to obtain a glass having at most 0.1 bubbles/g" (Claims 14 and 26).

Therefore, the claimed invention is both novel and unobvious over the disclosure of Tanaka.

It is kindly requested that the Examiner acknowledge the same and withdraw these rejections.

The rejection of Claim 5 under 35 U.S.C. § 103(a) over Tanaka in view of U.S. Patent No. 6,251,811 (hereinafter US '811) is respectfully traversed.

As noted above, Tanaka does not describe or suggest the claimed invention.

US '811 alone does not suggest the aspects of the claimed invention. Most particularly, US '811 does not suggest "increasing water content in the raw material or molten glass to obtain a glass having at most 0.1 bubbles/g" (Claims 14 and 26).

Accordingly, the claimed invention must be unobvious, in the absence of a suggestion from either Tanaka or US '811.

It is kindly requested that the Examiner withdraw this rejection.

The rejection of Claims 1-3 and 6-7 under 35 U.S.C. § 103(a) over U.S. Patent No. Re. 36,082 (hereinafter US '082) is respectfully traversed.

US '082 describes a process for degassing molten glass under a negative pressure of 1/20 to 1/3 atmospheric pressure (Abstract, col. 4, line 51). The disclosure of US '082 suggests many things, but there is no suggestion to produce a glass for a cathode ray tube in a manner as claimed in either Claim 14 or Claim 26.

It is kindly request that the Examiner withdraw this rejection.

The rejection of Claims 1-3 and 6-7 under 35 U.S.C. § 103(a) over U.S. Patent No. 6,332,339 (hereinafter US '339) is respectfully traversed.

US '339 describes a method for vacuum degassing molten glass; wherein said "molten glass which is under an atmosphere of pressure P, is fed into a vacuum chamber capable of rendering a pressure to the molten glass to be in a range of 38 [mmHg] – (P-50) [mmHg]" (Abstract). US '339 also describes the emission of CO_2 and H_2O from the molten glass (col. 7, *ll*. 21-31), and a permissible range of bubble densities of the molten glass (col. 12, *ll*. 47-

53, Table 1). However, nowhere in the disclosure of US '339 is there a suggestion that would render the claimed invention obvious.

It is kindly requested that the Examiner acknowledge the same and withdraw this rejection.

In view of the amendments to the claims and the above comments, it is believed that the application is in a condition for allowance. An early and favorable indication of the same is earnestly requested.

Respectfully submitted,
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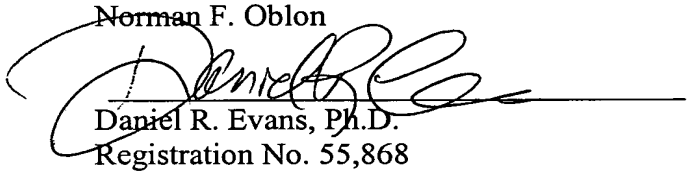

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